

WHAT IS CLAIMED IS:

1. A solid, hydrocarbon insoluble catalyst composition comprising:

A) a solid, particulated complex comprising moieties of at least magnesium, a Group 4 transition metal, and a halide;

B) one or more α -amino-substituted- or α -imino- substituted- 2-alkylpyridine compounds;

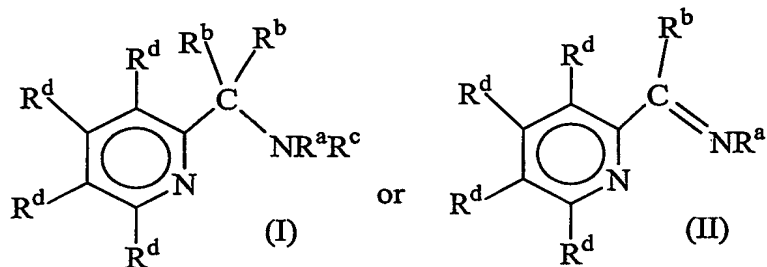
C) one or more organoaluminum cocatalyst compounds;

D) optionally one or more internal electron donors; and

E) optionally one or more selectivity control agents.

2. The catalyst composition as claimed in claim 1, wherein the Group 4 metal is Zr, Hf or a mixture of Zr and Hf.

3. The catalyst composition as claimed in claim 1, wherein the substituted 2-alkylpyridine compound corresponds to the following formula I or II:



, wherein:

R^a is aryl, or an aryl group substituted with one or more alkyl, halo, haloalkyl, or dihydrocarbylamine groups, said R^a group having from 6 to 30 carbons;

R^b and R^d , independently each occurrence, are selected from the group consisting of hydrogen, R^a , C_{1-10} alkyl, C_{1-10} haloalkyl, and C_{7-20} aralkyl; and

R^c is hydride, an alkali metal cation, an alkaline earth metal halide cation, or a cationic organometal ligand comprising a metal of Groups 2-13 of the Periodic Table of the Elements.

4. The catalyst composition as claimed in claim 3, wherein the substituted 2-alkylpyridine compound is 2-pyridyl-2-(N-(2,6-diisopropylphenyl)amino)propane or (6-(1-naphthyl)pyrid-2-yl)(N-(2,6-diisopropylphenyl)amino)(2-methylphenyl)methane.

5 5. The catalyst composition as claimed in claim 1, wherein the solid, particulated magnesium and Group 4 metal halide complex corresponds to the formula $MgdTi(OR^e)_eX_f(ED)_g$ wherein R^e , independently each occurrence is an aliphatic or aromatic hydrocarbon radical having 1 to 14 carbon atoms or COR^f wherein R^f is an aliphatic or aromatic hydrocarbon radical having 1 to 14 carbon atoms; X independently
10 each occurrence is chlorine, bromine or iodine; ED is an electron donor; d is a number from 1 to 50; e is a number from 0 to 5; f is a number from 2 to 100; and g is a number from 0 to 10.

6. A method of making a catalyst component as claimed in claim 1 comprising
15 contacting components A), B) and C) and optionally components D) and E) in an inert diluent in any order, with or without intermediate recover of a product, and removing the diluent.

7. A process of polymerizing at least one olefin comprising contacting at least
20 one olefin in the presence of the catalyst composition of claim 1.

8. The process of claim 7 wherein propylene is homopolymerized or copolymerized with one or more olefins or diolefins and the α -amino-substituted- or α -imino- substituted- 2-alkylpyridine compound is (6-(1-naphthyl)pyrid-2-yl)(N-(2,6-
25 diisopropylphenyl)amino)(2-methylphenyl)methane.